WHAT IS CLAIMED IS

1. A control method for an automatic transmission having an input shaft rotating by torque from a drive power source, an output shaft for outputting a rotation torque to a drive shaft of a vehicle, plural idle gears for transferring the rotation torque between said input shaft and output shaft, and plural synchromeshes that constitute respective gear positions by engaging with each idle gear, furthermore said synchromeshes are equipped with; plural hubs rotating integrally with said input shaft or said output shaft; plural sleeves respectively provided on said hubs, rotatable integrally with said hubs and movable axially on said hubs; and plural rings respectively provided between said hubs and idle gears, and moving any of said sleeves toward the corresponding idle gear, any of said rings is pressed on the idle gear, the rotation torque from said input shaft is transferred to said output shaft through the ring and idle gear by the friction, and the sleeve can move to engage into the idle gear with synchronized speed,

wherein the control of said automatic transmission comprising:

when shifting the gear position into a target gear position from a current gear position, using some gear position different from said furrent gear position as one distributing gear position, so that controlling the pressing load of a synchromesh of said one distributing gear position to transfer at least part of the rotation torque from the drive power source by the friction, thereby releasing at least part of the rotation torque transferred by a synchromesh of said current gear position;

moving the synchromesh of said current gear position to a

disengaging position not meshed with said idle gear;

thereafter using another gear position different from said target gear position and said one distributing gear position as another distributing gear position, so that controlling the pressing load of the synchromesh of said another distributing gear to increases gradually the transfer torque by the friction, and simultaneously decreasing gradually the pressing load of the synchromesh of said one distributing gear position;

besides such a distribution of transfer torque, synchronizing the speed of said input shaft with the speed corresponding to said target gear position by controlling the speed of said input shaft, and then moving the synchromesh of the target gear position to the meshing position.

2. The control method for an automatic transmission according to Claim 1, wherein:

the synchromesh of said one distributing gear position has a reduction ratio smaller than that of said current gear position,

and said another distributing gear position used for said change of the transfer torque from gear to gear has a reduction ratio smaller than that of said target gear position.

3. The control method for an automatic transmission according to Claim 1, when performing said change of the transfer torque from gear to gear, the pressing load of said one distributing gear position is decreased at a predetermined slope to decrease the transfer torque.

4. The control method for an automatic transmission according to Claim 3, when performing said change of the transfer torque from gear to gear, the pressing load of said one distributing gear position is decreased

at constant slope to decrease gradually the transfer torque.

5. The control method for an automatic transmission according to Claim 1,

when performing said change of the transfer torque from gear to gear, the pressing load of said one distributing gear position is decreased at a predetermined slope to decrease the transfer torque, and

the pressing load of the synchromesh of said another distributing gear position used for engaging said target gear position is controlled so that the speed of said input shaft is synchronized with the speed corresponding to said target gear position.

6. The control method for an automatic transmission according to Claim 1, when performing said change of the transfer torque from gear to gear, the pressing load of the synchromesh of said another distributing gear position used for engaging of said target gear position is increased at a predetermined slope to increase the transfer torque.

7. The control method for an automatic transmission according to Claim 6, when performing said change of the transfer torque from gear to gear, the pressing load of the synchromesh of said another distributing gear position used for engaging of said target gear position is increased at a constant slope to increase gradually the transfer torque.

8. The control method for an automatic transmission according to Claim 1,

when performing said change of the transfer torque from gear to gear, the pressing load of the synchromesh of said another distributing gear position used for engaging of said target gear position is increased at

a predetermined slope to increase the transfer torque, and

the pressing load of the synchromesh of said one distributing gear position is controlled so that the speed of said input shaft is synchronized with the speed corresponding to said target gear position.

9. The control method for an automatic transmission according to Claim 1, wherein the start timing when performing said change of the transfer torque from gear to gear is controlled according to at least parameter indicating a state of the frictional surface of the synchromesh.

10. The control method for an automatic transmission according to Claim 9, wherein as a parameter indicating the state of the frictional surface of the synchromesh, the heat value of the frictional surface is used.

11. The control method for an automatic transmission according to Claim 9, wherein as a parameter indicating the state of the frictional surface of the synchromesh, the temperature of the frictional surface is used.

12. The control method for an automatic transmission according to Claim 9, wherein as a parameter indicating the state of the frictional surface of the synchromesh, the abrasion loss of the frictional surface is used.

13. A control apparatus for an automatic transmission having an input shaft rotating by torque from a drive power source, an output shaft for outputting a rotation torque to a drive shaft of a vehicle, plural idle gears for transferring the rotation torque between said input shaft and output shaft, and plural synchromeshes that constitute respective gear

positions by engaging with each idle gear, furthermore said synchromeshes are equipped with; plural hubs rotating integrally with said input shaft or said output shaft; plural sleeves respectively provided on said hubs, rotatable integrally with said hubs and movable axially on said hubs; and plural rings respectively provided between said hubs and idle gears, and moving any of said sleeves toward the corresponding idle gear, any of said rings is pressed on the idle gear, the rotation torque from said input shaft is transferred to said output shaft through the ring and idle gear by the friction, and the sleeve can move to engage into the idle gear with synchronized speed,

wherein said control apparatus has a control unit which performs the following contents:

when shifting the gear position into a target gear position from a current gear position, some gear position different from said current gear position is used as one distributing gear position , said control unit controls the pressing load of a synchromesh of said one distributing gear position to make at least part of the rotation torque from the drive power source transfer by the friction, thereby releases at least part of the rotation torque transferred by a synchromesh of said current gear position, and then moves the synchromesh of said curent gear position to a disengaging position not meshed with said idle gear, thereafter uses another gear position different from said target gear position and said one distributing gear position as another distributing gear position, so that controls the pressing load of the synchromesh of said another distributing gear to make the transfer torque increase gradually by the friction, and

simultaneously makes the pressing load of the synchromesh of said one distributing gear position decrease gradually, besides such a distribution of transfer torque, makes the speed of said input shaft synchronize with the speed corresponding to said target gear position by controlling the speed of said input shaft, and then moves the synchromesh of the target gear position to the meshing position.